

Swamy D K V

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Professional Summary

Senior Principal Engineer with 15+ years of experience in distributed systems, networking, and cloud-native platforms.

Specializes in building high-performance, fault-tolerant infrastructure across far-edge and near-edge environments.

Currently leading networking architecture for a hypervisor-based platform enabling virtual machines, containers, and Kubernetes workloads across distributed and heterogeneous environments.

Skills

Distributed Systems & Cloud

Kubernetes, microservices, high availability, scalability, REST API design, OpenAPI specification

Networking & Infrastructure

TCP/IP, SDN, NFV, network virtualization, Policy-Based Routing (PBR), VLAN (trunk/access), IP address management (IPAM), MAC lifecycle management

Multi-Access Networking

Ethernet, Wi-Fi (TLS/TTLS/PSK), cellular connectivity

Programming

Go, Python, C

Tools & Platforms

Kubernetes, Docker, Podman, MongoDB, SQL, REST APIs, OpenAPI, CI/CD, Git

Work Experience

Software Senior Principal Engineer

Dell Technologies, Bengaluru

Aug 2022 – Present

Hypervisor Networking & Infrastructure

- Own networking layer of a hypervisor-based platform supporting virtual machines and container runtimes
- Design IP address management (IPAM) and MAC lifecycle management across nodes and clusters
- Implement VLAN-based segmentation (trunk and access modes) for workload isolation
- Design cross-cluster networking enabling virtual machine migration and workload mobility
- Support distributed storage traffic (CEPH, iSCSI) ensuring reliable synchronization
- Implement policy-based routing and fine-grained traffic control across distributed environments
- Design and enforce default-deny (secure-by-default) network security model with explicit allow rules
- Build firewall policies ensuring strict isolation across host, VM, and container layers
- Enable networking across Ethernet, Wi-Fi, and cellular interfaces
- Integrate TLS-based secure communication across heterogeneous networks

Kubernetes & Orchestrator Networking

- Design multi-network architecture in Kubernetes integrated with NativeEdge Orchestrator
- Enable separation of in-band (data plane) and out-of-band (management plane) traffic
- Implement source-sensitive routing to steer traffic across multiple networks based on origin
- Build ingress architecture using MetalLB and NGINX for controlled service exposure
- Ensure consistent networking behavior across workloads operating on multiple network paths

Platform & Engineering

- Design REST APIs and OpenAPI specifications for platform and networking components
- Design diagnostic protocols and service console for system-level troubleshooting and observability
- Filed 5 patents across infrastructure diagnostics, networking, and system access mechanisms

- Lead Spec-Driven Development (SDD) adoption across engineering team

Senior Software Engineer

Cisco Systems, Bengaluru

Jan 2015 – Aug 2022

- Design and optimize Session Management Function (SMF) for 5G core networks
- Improve throughput (~1K → ~3K TPS) and reduce memory usage by 50%
- Build scalable and resilient state machines for telecom workflows
- Develop REST APIs and optimize MongoDB performance for scalable systems
- Develop LTE core components (SGW, PGW) with failover and high availability

Earlier Experience

Accenture (2014 – 2015)

- Telecom software development and integration

Sasken (2010 – 2014)

- LTE testing platforms and automation systems

TelecomOne (2009 – 2010)

- Network benchmarking and performance analysis

Education

- MCA – IGNOU, 2024
- PGDCA – IGNOU, 2020
- BE (Electronics & Communication Engineering) – VTU, 2010

Certifications & Awards

- Dell GenAI Foundations Certification (2024)
- Dell Game Changer Award (2x)
- Cisco MBG Excellence Award